TECHNICAL REVIEW DOCUMENT
For
Minor Modification to
OPERATING PERMIT 95OPBO082

to be issued to:

CEMEX, Inc.
Lyons Cement Plant
Boulder County
Source ID 0130003

Prepared by Cathy Rhodes
October, 2001

I. PURPOSE:

This document establishes the basis for decisions made regarding the Applicable Requirements, Emission Factors, Monitoring Plan and Compliance Status of Emission Units covered within the Operating Permit proposed for this site. It is designed for reference during review of the proposed permit by the EPA and during Public Comment. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Conclusions in this document are based on information provided in the application submittal of October 4, 2001.

Any revisions made to the underlying construction permits associated with this facility (formerly issued to Southdown, Inc.) in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

II. Source Description:

This facility manufactures Portland Cement. The facility is located approximately 12 miles north of Boulder, near the town of Lyons. There are no affected states within 50 miles of the facility. Rocky Mountain National Park, Rawah Wilderness Area, and Eagle's Nest Wilderness Area are Federal Class I designated areas within 100 kilometers of the plant.

The specific process/units affected by this proposal are as follows.

TOWER PREHEATER
Raw material enters the pre-heater calciner where the hot gases from the kiln heat the raw materials, burning off the hydrocarbons. This unit also partially calcines the material.

KILN
The reaction in the kiln is known as calcination. The heating of the raw meal drives off about 40% of the material as carbon dioxide, leaving calcium oxide. During the heating process iron, aluminum and silica are combined with the calcium oxide.

The kiln is 14 feet in diameter and 245 feet long. Various types of fuel are burned to heat the material to about 2700 degrees Fahrenheit. The material moves through the kiln in about 80 to 90 minutes and is discharged as clinker. Clinker is a semi-finished, calcined product formed by burning a finely ground mixture of limestone, shale, iron and silica. Clinker is a mixture comprised of one-inch balls to fine granules which is stored for final grinding with gypsum. Different types of clinker are produced to make different types of cement.

CLINKER COOLER
The clinker from the kiln passes into a 11-foot by 55-foot horizontal grate cooler equipped with a clinker breaker. Rapid cooling of the clinker is needed for formation of the clinker crystal structure.

III. Project Description

CEMEX is proposing to move the location of the burner pipe at the feed shelf. This will improve the overall thermal efficiency of the calciner/kiln, and will allow the use of coal with lower heat content. This change will result in a reduction in actual NOx emissions and may cause a slight increase in CO actual emissions. The Division is evaluating this proposal as a Pollution Control Project (PCP) in accordance with EPA guidance.

EPA Policy
For several years, the EPA has had a policy of excluding certain Pollution Control Projects from the New Source Review requirements of the Clean Air Act. Although the proposed project does not result in a significant emission increase that would be subject to NSR requirements, the Division is processing the request under the PCP procedures in the event the CO emission increase proves to be greater than predicted.

Note: The permittee proposes to revert back to the current burner configuration if the change does not provide the anticipated NOx emission reduction. The source is equipped with both NOx and CO continuous emission monitors (CEMs).

Analysis
A pollution control project must be, on balance, “environmentally beneficial” to be eligible for exclusion. The EPA guidance requires the following information for evaluating pollution control projects, and for ensuring certain safeguards are in place.

Emission changes
The proposal must include before and projected after emissions increases and decreases from the project itself and any collateral changes in emissions of other pollutants or environmental effects (e.g., waste production). The request should discuss any changes in air toxic/hazardous air pollutants.

Before and projected after emissions for this project are as follows:

	NOx TPY	CO TPY
Potential to Emit (Current Permit Limit)	2,662.5	452.8
Maximum Allowable	2,662.5	452.8
Past 2-year actual average	2,160.4	163.8
Proposed Limits	1,900.0	260.0
Net Change – Actual	-260.4	96.2
Net Change from allowable	-762.5	-192.8

An increase in CO emissions is the only identified collateral change in criteria pollutant emissions associated with this project. No increase in actual HAP emissions is expected. In addition, no other collateral environmental effects are anticipated.

The proposed limits listed in the table above will be included in the operating permit. No increase in the production level will occur.

Information demonstrating that collateral increases will be minimized and will not result in environmental harm:

The modification will provide a longer residency time for the exhaust gases prior to discharge into the atmosphere. For this reason, the applicant believes CO emissions will stay the same as current actual emissions. A CEM is used to measure CO emissions, to ensure the emission limit is met.

Ambient Air Impact

EPA guidance requires that where a pollution control project will result in a significant increase in emissions and that increased level has not previously been analyzed for its air quality impact and raises the possibility of a NAAQS, increment, or AQRV violation, the permitting authority is to require the source to provide an air quality analysis sufficient to demonstrate the impact of the project. A significant increase in CO emissions is not expected from this project. The Maximum Allowable CO emission rate listed in the table above was previously modeled, therefore no further analysis is required for this project. The results are presented below.

Pollutant	Averaging Period	Modeled Impact from CEMEX (ug/m^3)	Modeled Impact from Nearby (off-site) Sources(ug/m^3)	Monitored Background Concentration (estimate) to account for off-site sources not included in model (ug/m^3)	Cumulative Impact (Total) (ug/m^3)	Ambient Air Standard (ug/m^3)
CO	1-hour	151.4	NA	10500	10651	40000
	8-hour	34.9	NA	6300	6335	10000

(from June 15, 1999 memo Chuck Machovec to Cathy Rhodes – "Southdown Portland Cement – Dispersion Modeling Review for short-term emission limits")

Offsets

The EPA guidance indicates that, in the case of nonattainment areas, the State or the source must provide offsetting emissions reductions for any significant increase in a nonattainment pollutant from the pollution control project. The source is located in an area that is currently classified as nonattainment for CO. The proposed CO emission increase is below the significant level. Furthermore, the applicant has agreed to revert to the previous burner pipe configuration if the anticipated NOx reduction does not occur. In addition, the EPA is in process of approving the state's State Implementation Plan for approval of CO attainment status. The Division expects approval and redesignation by the end of 2001.

Environmentally Beneficial Determination

Based on the above information, the Division has determined that the proposed project will be, on balance, environmentally beneficial. Reduced ambient air impacts from this source's NOx emissions will occur. In addition, impacts on air quality related values due to NOx emissions from this source may result. The predicted increase in CO emissions is still below the level that was previously modeled and shown to meet the ambient air quality standards. The Division does not expect an increased risk from emissions of hazardous air pollutants to occur.

IV. Permit Processing Procedure

The requested revision qualifies as a minor modification to the operating permit because emission increases are less than significance levels. The EPA's PCP guidance requires the permitting authority to afford the public the opportunity to review and comment on the source's application for the NSR review exclusion prior to construction. The Division is therefore providing Public Notice of the PCP. Upon completion of the public notice period or resolution of public comments (if any are received), the permittee may make the proposed change under the operating permit minor modification provisions. After public notice, the permit will be sent to the EPA for their 45 day review period under the minor permit modification procedures.